

CLAIM AMENDMENTS

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Please replace the claims presently on file with those set forth below:

61. (Currently Amended) A method of presenting, on a computer controlled display device, transformation rules of abstract representations using animations of graphical abstract symbols to simulate continuous transformations.
62. (Previously Added) A method of teaching transformation rules for abstract symbolic statements using the method of Claim 61.
63. (Previously Amended) A method of illustrating transformations of abstract symbol statements, comprising:
- a) presenting a first form of an abstract symbol statement on a computer-controlled display device;
 - b) presenting a second form of the abstract symbol statement that is a transformation of the first form;
 - c) animating, so as to produce an illusion of motion, portions of the first form of the abstract symbol statement, while other portions of the first form remain static, to indicate conceptual changes involved in the transformation from the first form to the second form of the abstract symbol statement.
64. (Previously Added) The method of claim 63, further comprising:
- d) calculating intermediate abstract representations between the first and second forms of the abstract symbol statement; and
 - e) animating changes between the first and second forms of the abstract symbol statement by displaying said intermediate representations sequentially on said display device to cause the transformation to appear continuous.
65. (Previously Added) The method of Claim 63 wherein the abstract statement is an equation.
66. (Previously Added) A method of teaching transformation rules for abstract symbolic statements using the method of Claim 63.
67. (Previously Added) The method of Claim 63, further comprising: (d) accepting user input; and (e) changing the computer-controlled display in response to the user input.

68. (Previously Added) A method of teaching transformation rules for abstract symbolic statements using the method of Claim 67.
69. (Previously Added) The method of Claim 67, further comprising: (f) providing computer-controlled voice explanations synchronized with the animations of portions of the first form of the abstract symbol statement.
70. (Previously Added) A method of teaching transformation rules for abstract symbolic statements using the method of Claim 69.
71. (Previously Added) The method of Claim 69, further comprising (g) converting text to speech.
72. (Previously Added) The method of Claim 71, further comprising (h) controlling the synchronization of the voice and the animations of portions of the first form of the abstract symbol statement by means of a text script.
73. (Previously Added) A method of teaching transformation rules for abstract symbolic statements by using the method of Claim 72.
74. (Previously Added) The method of Claim 63 wherein the step (c) of animating portions of the first form of the abstract symbol statement includes one or more animation techniques selected from the group of animation techniques consisting of:
- i) moving a symbol along a prescribed path;
 - ii) transforming a first symbol into a second symbol;
 - iii) splitting a first symbol into multiple copies;
 - iv) fading out a symbol;
 - v) fading in a symbol;
 - vi) adding pictorial additions to a symbol, and
 - vii) removing a pictorial addition that was previously added to a symbol.
75. (Previously Added) A method of teaching transformation rules for abstract symbolic statements using the method of Claim 74.
76. (Previously Added) The method of Claim 74, further comprising:

- d) accepting user input;
- e) changing the computer-controlled display in response to the user input; and
- f) providing computer-controlled voice explanations synchronized with the animations.

77. (Previously Added) A method of teaching transformation rules for abstract symbolic statements using the method of Claim 76.

78. (Previously Added) The method of Claim 76, further comprising (g) evaluating context dependent content of the voice explanations.

79. (Previously Added) A method of teaching transformation rules for abstract symbolic statements using the method of Claim 78.

80. (Previously Amended) A method of teaching transformation rules for abstract symbolic statements comprising:

- a) a step for displaying an abstract symbol statement in a first form;
- b) a step for displaying an abstract symbol statement in a second, transformed form; and
- c) a step for animating a transition between the first form and the second, transformed form of the abstract statement, so as to give an illusion of motion to at least a part of one of the abstract symbol statements.